

February, with consequent extermination in a very few years' time. Fortunately, however, there is nothing at present to suggest the likelihood of such a calamity. Their insect diet perhaps makes the birds difficult to keep in captivity, for the species does not appear in the cages of that inveterate "bird-fancier," John Chinaman; they have no ornamental plumes, stores of oil, or other such possessions likely to attract the attention of the utilitarian, so that, despite their isolation, singularity of habitat, and indifference to man, I think we may say with a satisfactory measure of confidence, "Floreat *Paradoxornis heudei*."

IX.—*Notes on Birds observed in the Bermuda Islands during the Winter of 1912-1913.* By JOHN NOBLE KENNEDY, R.N.

THE Bermudas are a curiously elongated group of islands situated in the Atlantic about 600 miles west of Cape Hatteras in the United States, and in latitude $32^{\circ} 15'$ N. and longitude $64^{\circ} 51'$ W. There are no high hills and most of the ground is cultivated, the fertile meadows being interspersed by cedar groves. The climate during the winter months is warm and damp.

The group does not appear to be in one of the direct lines of migration, but the list of "accidental visitors" is a long one. I once visited the lighthouse at Gibb's Hill with a view of gaining some information as to migrants killed at the lantern, but I was told that only one bird had been taken in this manner during the past three years.

The last general list of the birds of these islands, compiled by Captain S. G. Reid, R.E., appeared in the 'Zoologist' for October and November 1877, and, except for an article on the resident land birds published in 1901*, the ornithology of the Bermudas appears to have been somewhat neglected of late years.

* "The Resident Land Birds of Bermuda," by Outram Bangs & T. S. Bradley, 'Auk,' vol. xviii. pp. 249-257.

The following notes are the outcome of observations made by me between 11 November, 1912, and 6 May, 1913, during which period H.M.S. 'Melpomene,' to which ship I then belonged, was being refitted in the Naval Dockyard.

The nomenclature adopted is that of the A.O.U. Check-List of North American Birds, 1910.

Phaëthon americanus O.-Grant.

The Yellow-billed Tropic Bird visits the Bermudas in large numbers for breeding purposes, arriving generally about the end of February or beginning of March*.

The writer's earliest record is February the 23rd, 1913, on which date several of these birds were observed by Lieutenant C. R. Peploe, R.N., at Castle Harbour—a favourite nesting place. On 19 April nests in the cliffs near Whale Bay contained young, but fresh eggs were taken on 22 April.

In obedience to the brooding instinct which possesses them at this time, the birds were in the latter part of April still sitting in nests which had been robbed of their eggs. They did not attempt to fly out of their nest-holes on being approached; and when sticks were put in, the birds would seize them in their bills and hold on so tenaciously that they could be drawn out to the entrance. When brought out they were always so terror-stricken that they lay helpless on the ground for a considerable time before taking wing.

On 26 April a nesting colony of six or seven pairs was discovered in the battlements above the naval rifle-range in Ireland Island. Some of the birds were flying gracefully about over the sea, and every few moments one of them would wing its way up to a nest-hole, flutter for a moment at the entrance as if trying to alight, and then sail out again to its companions. One bird which had successfully alighted and entered its hole was forcibly ejected almost immediately afterwards by the sitting bird, probably its mate, in the most undignified manner.

* Reid, Zool. 1877, p. 487.

Ardea herodias herodias Linn.

Several examples of the Great Blue Heron were met with from time to time during the winter. It was last seen near Wreck Hill, Somerset, on 25 April, 1913.

It is most interesting to watch one of these herons stalking and capturing its prey. The bird moves about stealthily among the weeds at the margin of some small lake or creek, thrusting its head forward at each step and peering intently into the water. On sighting its prey it sinks slowly downwards and forwards until its breast feathers appear to be submerged in the water, then suddenly its long, sharp beak flashes out, and the bird rises again to a standing position, swallowing its capture and shaking the water from its plumage.

Florida cœrulea (Linn.).

This Heron was encountered once by the writer, a single example being observed on the mud-flats near Wreck Hill, Somerset, on 25 April, 1913.

Ægialitis semipalmata (Bonap.).

Two of these birds were met with in Somerset on 21 December, 1912, and after a long chase along the shore one was secured.

Arenaria interpres morinella (Linn.).

A flock of six Turnstones was observed on the beach at the naval rifle-range in Ireland Island on 28 November, 1912. They were seen again a week later.

Numenius hudsonicus Lath.

One example of the Hudsonian Curlew was observed in Somerset on 21 December, 1912, but it was so wary that the writer could not get within shooting distance of it.

Numenius borealis (Forst.).

One example of the Eskimo Curlew was seen in Ireland Island on 20 January, 1913, and small companies of Curlews, which were probably of this species, were several times observed flying over Ireland Island during December 1912 and January 1913.

The writer's records of this and the preceding species do not confirm Captain Reid's statement that both species of Curlew remain but a short time after their arrival in August or September.

Colinus virginianus virginianus (Linn.).

The Bob-white was frequently met with in small companies of four or five during the winter, and on 19 January one large covey of twenty birds was flushed among the sand-dunes at Warwick Camp.

Messrs. Bangs and Bradlee, writing in 1901, state that this species was "not abundant," but now it is a common bird in these islands.

Several Bermuda specimens have been compared with a large series of skins in the British Museum, from the nearest parts of the mainland, but no appreciable differences can be discerned between them.

Chamepelia passerina bermudiana (Bangs & Bradlee).

The Ground-Dove is one of the commonest birds of the Bermudas.

A nest containing young birds about a week old was found on 4 May, twelve feet from the ground on the branch of a cedar. The mother bird sat very closely until the writer's hand was within a few inches of her, when she fell to the ground like a stone and "shammed wounded" by fluttering about in an apparently helpless manner.

Pandion haliaëtus carolinensis (Gmel.).

One fine male Osprey was seen by the writer near Gibb's Hill on 22 April, 1913.

Ceryle alcyon (Linn.).

The Belted Kingfisher was met with frequently during the winter.

It seems quite probable that some of these birds may breed in the Bermudas, for a pair was observed performing a kind of amatory flight on 20 April. They had not yet gone on 25 April, when one was seen in Somerset, but between that date and 7 May, when H.M.S. 'Melpomene'

sailed for England, the writer had not another opportunity of visiting the mangrove swamps which they haunt.

It may be worthy of note that this Kingfisher was more often observed fishing in salt- than in fresh-water.

Chordeiles virginianus virginianus (Gmel.).

Two of these Goatsuckers passed over the marsh below Government House on the evening of 6 April; and on the following day two more were seen hawking for moths over the trees in Somerset.

Corvus brachyrhynchos brachyrhynchos Brehm.

Messrs. Bangs and Bradlee considered the species of the Bermuda Crow doubtful. One skin obtained in Bermuda in February, 1875, by Captain H. Edmund and now in the British Museum, has been compared with a series of specimens of *C. b. brachyrhynchos* from the mainland, and it was noticed that it had less violet on the feathers of the back. The wing measurement of the Bermuda bird is 11·9 in., the average wing of *C. b. brachyrhynchos* measuring 13·0 in. to 13·5 in.* Unfortunately, however, this was the only Bermuda specimen which was available for examination, and possibly it may have been an immature bird.

On 19 April two of these crows were encountered in a wood near Gibb's Hill. They flew around, calling loudly, and their behaviour led the writer to think that they must have a nest near by. After a short search it was discovered, apparently half built, in a tall and slender tree.

Cardinalis cardinalis cardinalis (Linn.).

The Cardinal is exceedingly abundant in the Bermudas.

The birds began to pair about 8 March, and a nest containing fresh eggs was found on 19 April.

Passer domesticus (Linn.).

The European House Sparrow, originally introduced in 1874, is now exceedingly plentiful and is apparently increasing in numbers.

* Baird, B. N. A. 1858, p. 566.

***Passerculus sandwichensis savanna* (Wils.).**

One male example of the Savannah Sparrow was shot on Boaz on 8 March, 1913. It was in company with a number of House Sparrows.

Captain Reid, writing in 1877, records two instances only of its occurrence.

***Carduelis carduelis bermudiana* Kennedy.**

This bird has been described by the writer as a new subspecies*.

Its habits are similar to those of *C. carduelis*.

It seems probable that this bird was originally introduced by man at some unknown date. Captain Reid recorded one seen near Harrington Sound in April, 1875, this being apparently the only example observed between March, 1874 and June, 1875. It is now abundant in the Bermudas, and small companies were frequently met with during the winter months.

The birds were beginning to pair on 4 March, but on 10 March flocks were still to be seen. Fully fledged young were being fed by their parents on 5 May.

***Vireo griseus bermudianus* Bangs & Bradlee.**

The Bermuda Vireo is now exceedingly numerous.

A nest found on 25 April, 1913, contained young birds about a week old, whilst in another, seen on 28 April, there were three fresh eggs.

***Mniotilta varia* (Linn.).**

The Black and White Warbler was not at all common during the winter 1912-1913.

One female was shot in Ireland Island on 10 March, 1913, and a male in fine plumage at Fairylands on 23 April. Its call-note was heard several times during April in the woods around Hamilton.

* Bull. B. O. C. vol. xxxiii. 1913, p. 33.

***Compothlypis americana americana* (Linn.).**

One male example of the Parula Warbler was shot at Fairylands on 18 April, 1913. This bird had been observed a few days before by Mr. T. S. Bradlee of Boston, who very kindly allowed the writer to secure it for his collection.

Captain Reid records four occurrences, the last being in 1874.

***Dumetella carolinensis* (Linn.).**

The Catbird is very common in the Bermudas.

Nests with fresh eggs were found on 27 April.

***Merula migratoria* (Linn.).**

A flock of about twenty American Robins was seen at Warwick Camp on 19 January, 1913. The birds were very shy and could not be closely approached.

This species is uncommon in these islands.

***Sialia sialis sialis* (Linn.).**

This handsome species is very abundant, and flocks of from twelve to twenty birds were frequently seen during the winter.

Nidification commenced about 10 March, and fully-fledged young were seen on 4 May.

On 12 March the writer shot and slightly wounded a male Bluebird, which was accompanied by another male and a female. These, instead of flying away at the report of the gun, fluttered over their wounded companion and, alighting on the ground, pecked at him with their bills, evidently urging him to rise. With an effort he flew up into a neighbouring tree, only to fall to the ground once more, when he was quickly captured and put out of pain.

On another occasion, some two months later, a hen sparrow had been shot in a field, and whilst the writer was walking out to pick it up a male Bluebird alighted beside it. It faced the writer fearlessly, looking first at him and then at the dead sparrow in the intent fashion which is peculiar to this species, and not until the writer was within a few feet of it did it fly off into the woods.